Claims

We claim:

1. A composition comprising a pharmaceutically acceptable carrier and a deglycosylated fragment of a kringle 1-5 region of a plasminogen protein in a greater amount than a naturally glycosylated form of the deglycosylated fragment, wherein the deglycosylated fragment lacks one or more carbohydrate moieties linked to the naturally glycosylated form and wherein the deglycosylated fragment has antiangiogenic activity.

2. The composition of claim 1, wherein the deglycosylated fragment lacks a bisialylated-biantennary glycan.

3. The composition of claim 1, wherein the deglycosylated fragment lacks an N-linked carbohydrate moiety.

4. The composition of claim 1, wherein the deglycosylated fragment lacks a carbohydrate chain at amino acid position Asn-289 of human plasminogen.

5. The composition of claim 1, wherein the deglycosylated fragment is approximately a kringle 1-3 protein.

6. The composition of claim 5, wherein the deglycosylated fragment begins at approximately amino acid 87 of human plasminogen.

7. The composition of claim 5, wherein the deglycosylated fragment amino acid sequence is shown in SEQ ID NO:F.

8. The composition of claim 1, wherein the deglycosylated fragment is produced recombinantly.

9. The composition of claim 1, wherein the deglycosylated fragment has an amino acid substitution at amino acid position 289 of human plasminogen.

10. The composition of claim 1, wherein the deglycosylated fragment and the glycosylated form are at a ratio of at least 60:40.

11. The composition of claim 1, wherein the deglycosylated fragment and the glycosylated form are at a ratio of at least 80:20.

12. The composition of claim 1, wherein the deglycosylated fragment and the glycosylated form are at a ratio of 100:0.

13. A nucleotide sequence encoding the deglycosylated fragment of claim 1.

14. The nucleotide sequence of claim 13, wherein the nucleotide sequence is shown in SEQ ID NO:2.

15. The composition of claim 1, wherein the deglycosylated fragment has antiangiogenic activity *in vitro*.

16. The composition of claim 1, wherein the deglycosylated fragment has antiangiogenic activity *in vivo*.

17. A method of inhibiting angiogenesis in an individual comprising, increasing in the individual an *in vivo* concentration of a deglycosylated fragment of a kringle 1-5 region of a plasminogen protein relative to *in vivo* concentration of a naturally glycosylated form of the deglycosylated fragment, wherein the deglycosylated fragment lacks one or more

carbohydrate moieties linked to the naturally glycosylated form and wherein the deglycosylated fragment has antiangiogenic activity *in vivo*.

18. The method of claim 17, wherein the deglycosylated fragment is administered to the individual.

19. The method of claim 17, wherein the deglycosylated fragment lacks a bisialylated-biantennary glycan.

20. The method claim 19, wherein the deglycosylated fragment lacks an N-linked carbohydrate.

21. The method of claim 20, wherein the deglycosylated fragment lacks a carbohydrate chain at amino acid position Asn-289 of human plasminogen.

22. The method of claim 17, wherein the deglycosylated fragment is approximately a kringle 1-3 protein.

23. The method of claim 22, wherein the deglycosylated fragment begins at approximately amino acid 87 of human plasminogen.

24. The method of claim 22, wherein the deglycosylated fragment amino acid sequence is shown in SEQ ID NO:1.

25. The method of claim 17, wherein the deglycosylated fragment is produced recombinantly.

26. The method of claim 17, wherein the deglycosylated fragment has an amino acid substitution at amino acid position 289 of human plasminogen.

27. A deglycosylated fragment of a kringle 1-5 region of a plasminogen protein, wherein the deglycosylated fragment amino acid sequence is shown in SEQ ID NO:2.

28. A nucleic acid encoding a deglycosylated fragment of a kringle 1-5 region of a plasminogen protein, wherein the deglycosylated fragment nucleic acid sequence is shown in SEQ ID NO:1.